



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS T 9207 : 2008

(JASPA/JSA)

Portable ramps for wheelchairs

ICS 11.180

Reference number : JIS T 9207 : 2008 (E)

PROTECTED BY COPYRIGHT

Date of Establishment: 2008-05-20

Date of Public Notice in Official Gazette: 2008-05-20

Investigated by: Japanese Industrial Standards Committee
Standards Board

Technical Committee on Support for Aged and
Handicapped Persons

JIS T 9207:2008, First English edition published in 2009-01

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 2009

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

PROTECTED BY COPYRIGHT

Contents

	Page
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Name of each part	3
5 Classification	4
6 Required items	4
6.1 Risk analysis	4
6.2 Principle of ergonomics	4
6.3 Appearance	4
6.4 Constitution	5
6.5 Dimensions	5
6.6 Non-slip performance on travelling surface	5
6.7 Stationary performance	5
6.8 Deflection resistance performance	6
6.9 Durability performance	6
6.10 Load resisting performance	6
7 Test method	6
7.1 Test condition	6
7.2 Preparation of specimen and test order	6
7.3 Visual test	6
7.4 Non-slip test on travelling surface	6
7.5 Stationary performance test	8
7.6 Deflection resistance performance test	15
7.7 Durability performance test	17
7.8 Load resisting performance	18
8 Inspections	18
8.1 Inspection category and inspection item	18
9 Marking	19
10 Instruction manual	19
Annex A (normative) Test block	21

Foreword

This translation has been made based on the original Japanese Industrial Standard established by the Minister of Economy, Trade and Industry, through deliberations at the Japanese Industrial Standards Committee according to the proposal of establishing a Japanese Industrial Standard from Japan Assistive Products Association (JASPA)/ Japanese Standards Association (JSA) with a draft of Industrial Standard based on the provision of Article 12 Clause 1 of the Industrial Standardization Law.

This **JIS** document is protected by the Copyright Law.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

Portable ramps for wheelchairs

1 Scope

This Japanese Industrial Standard specifies the portable ramps (hereafter referred to as “ramps”) to be set on stairs, steps or the area where a gap exists to make it possible to pass through by supporting the load with both ends for manually propelled wheelchairs or electric wheelchairs. Ramps fixed by claws, etc. shall be excluded.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

- JIS G 4305 *Cold-rolled stainless steel plate, sheet and strip*
- JIS K 6253 *Rubber, vulcanized or thermoplastic—Determination of hardness*
- JIS R 6253 *Waterproof abrasive papers*
- JIS T 0102 *Glossary of terms used in rehabilitation equipments for the physically disabled or handicapped persons*
- JIS Z 8051 *Safety aspects—Guidelines for their inclusion in standards*
- JIS Z 8401 *Guide to the rounding of numbers*
- JIS Z 8703 *Standard atmospheric conditions for testing*
- ISO 7176-13 *Wheelchairs—Part 13: Determination of coefficient of friction of test surfaces*
- ISO 9999 *Assistive products for persons with disability—Classification and terminology*

3 Terms and definitions

For the purposes of this Standard, the definitions given in **JIS T 0102** and **ISO 9999**, and the following definitions apply.

3.1 travelling surface

whole ramp surface side on which wheels of manually propelled wheelchair or electric wheelchair will pass

The top and bottom parts of the ramp shall be included.

3.2 supporting base

base on which the top and bottom parts of the ramp shall be placed

3.3 test surface

travelling surface inside from the area which is contacting with the support base when the ramp is placed on the support base

The step of travelling surface due to the expansion mechanism, the folding mechanism, etc. shall be treated as one test surface.

3.4 pressurizing pad

that for loading on the test surface

3.5 pressurizing jig

jig for receiving the test load

It consists of four or two pressurizing pads and has a mechanism capable of loading each pad uniformly (see figure 1). The mass of pressurizing jig shall be the preliminary load.

3.6 deflection amount

increased amount of deflection on the test surface, expressed in angle, by using the test surface deflection when the preliminary load is added as a reference

3.7 retention deflection amount

difference between the deflection of the preliminary load only after removing the test load on the test surface, expressed in angle, and the test surface deflection when the preliminary load is added, which is used as a reference

3.8 solid type ramp

ramp consists of one inseparable board

3.9 rail type ramp

ramp consists of two or more separated boards

3.10 side wall

rising part of side of ramp

3.11 test rubber

rubber plate attached to the test surface of test block

3.12 maximum withstand mass

maximum permissible mass of the product

3.13 apparent hardness of caster wheel

outer circumference hardness of tyre which constitutes the caster wheel

3.14 longitudinal runout of caster wheel

total runout of outer circumference of tyre in radius direction which constitutes the caster wheel

Unit: mm

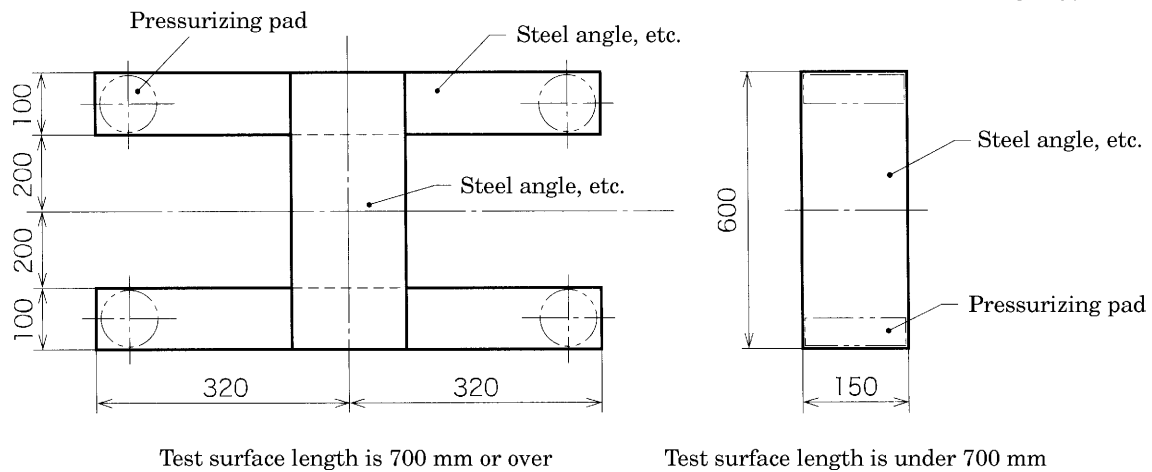
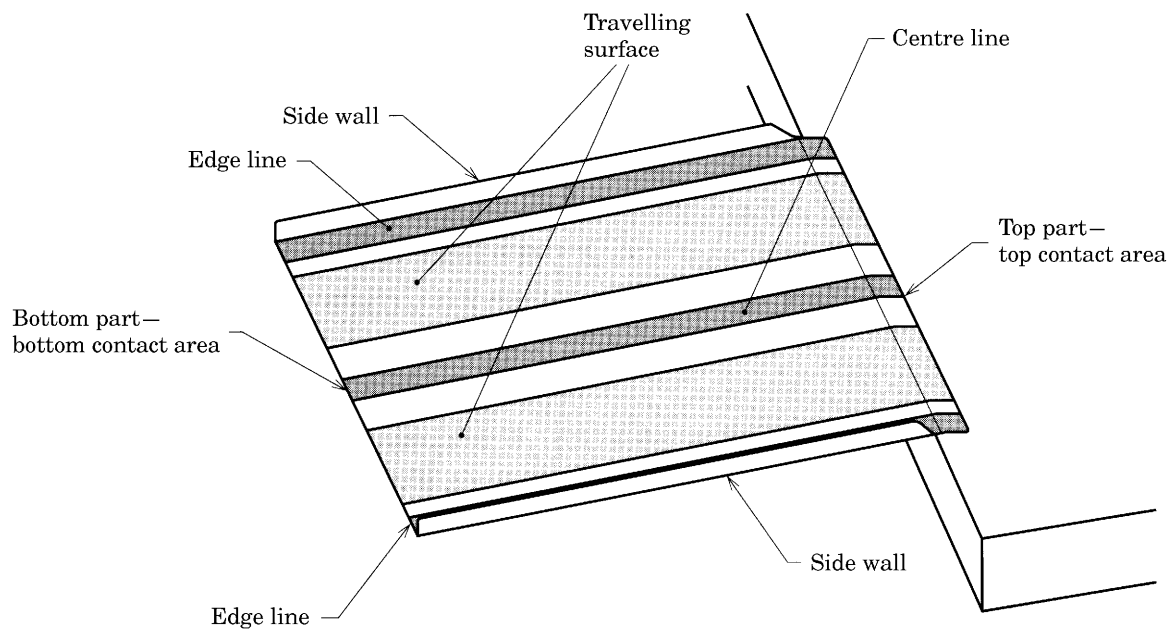


Figure 1 Example of pressurizing jig

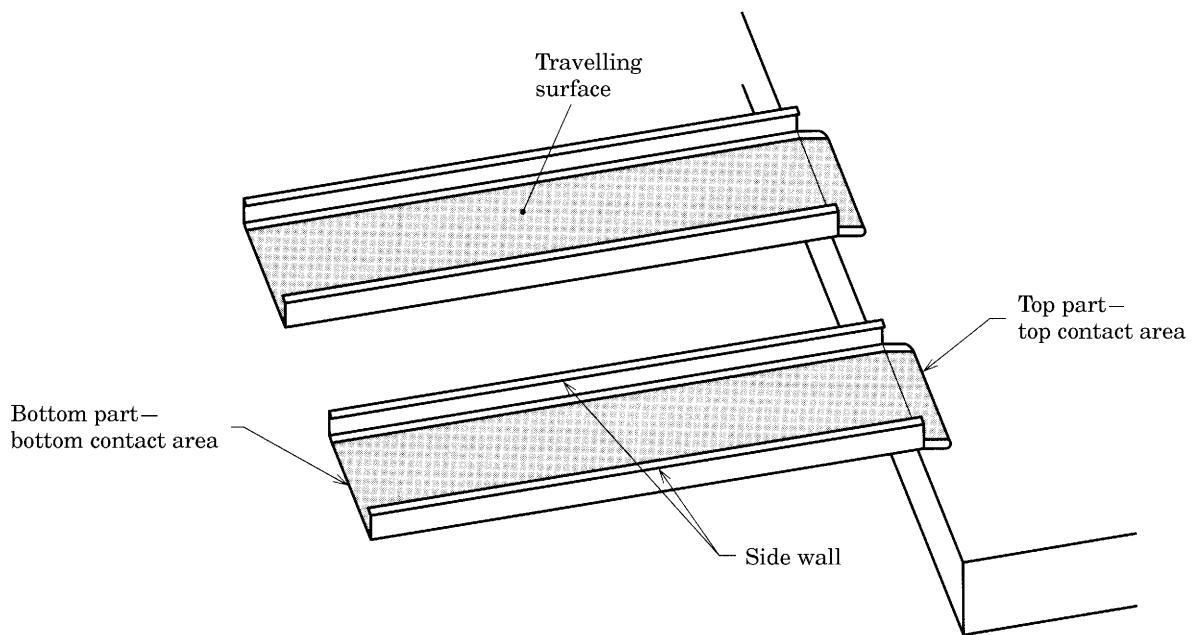
4 Name of each part

The name of each part shall be as shown in figure 2.



a) Solid type ramp

Figure 2 Name of each part



b) Rail type ramp

Figure 2 (concluded)

5 Classification

The ramp shall be classified into the following according to the shape.

- a) Solid type
- b) Rail type

NOTE : As for ramps, those of simple one-plate, those with folding mechanism, those with expansion mechanism, etc. are available.

6 Required items

6.1 Risk analysis

As for the risk analysis, the method of **JIS Z 8051** and the like shall be applied. Further, the execution and result of the risk analysis procedure shall be documented and maintained by the manufacturer.

6.2 Principle of ergonomics

The characteristics of aged person and handicapped person shall be considered at the time of designing.

6.3 Appearance

The appearance of ramp shall be as follows when tested in accordance with **7.3**.

- a) There shall be no agnail, point, burr, etc. which may cause injury on the area where hands and fingers may touch.
- b) The tip of bolt, nut, etc. appeared on outside shall not significantly be protruded.

- c) There shall be no significant unevenness, exposure of base material, peel and rust on the plated and coated surface.

6.4 Constitution

The constitution of ramp shall be as follows when tested in accordance with 7.3.

- a) The finished surface shall be good and there shall be no deformation detrimental to use.
- b) The non-slip work shall be performed at least on the area where tyres of wheel-chair pass and on the centre area where the assistant walks.

Example : For the non-slip work, such methods as making microasperity by coating with paint including particles, pasting abrasive papers and press working, etc. are available.

- c) The centre line or the edge line shall be marked on the travelling surface with indelibly method. When the side walls are equipped, they are not necessarily marked.
- d) For the rail type ramp, side walls shall be installed for both inside and outside walls.

6.5 Dimensions

The dimensions of ramp shall be as follows.

- a) **Width** The width shall be within ± 1 % of the dimensions described in the instruction manual.
- b) **Side wall** The internal height of side wall shall be 20 mm or over.
- c) **Effective width of travelling surface** The effective width of travelling surface shall be 690 mm or over for the solid type ramp with no side wall.

6.6 Non-slip performance on travelling surface

As for the non-slip performance on travelling surface, the dynamic friction coefficient μ , of top direction ($\mu_{\text{dry}\cdot\text{up}}$) and bottom direction ($\mu_{\text{dry}\cdot\text{down}}$) of dry condition, and of top direction ($\mu_{\text{wet}\cdot\text{up}}$) and bottom direction ($\mu_{\text{wet}\cdot\text{down}}$) of water sprayed condition, shall be 0.75 or over when tested in accordance with 7.4.

6.7 Stationary performance

The stationary performance of the ramp shall be as follows.

- a) **Stationary performance I (performance supposing breaking on ramp)** As for the stationary performance I, the ramp pulling force shall be 140 N or over, when tested in accordance with 7.5. When the test surface length is under 150 mm, this shall not apply.
- b) **Stationary performance II (performance supposing heading into ramp)** As for the stationary performance II, the displacement of ramp shall be under 10 mm, when tested in accordance with 7.5.